The Power Of Clarity

Owner's Manual and Setup Procedures

RADIA Freestanding.....520i / 420i / 220i / 210i

Introduction

Congratulations and thank you for selecting state of the art Radia Freestanding loudspeakers from BG Corp. We have assembled your loudspeakers with the greatest care and using the finest materials available. This craftsmanship, combined with our patented planar ribbon technology, delivers sound unmatched by any conventional loudspeaker.

Radia loudspeakers are ideal for either high performance stereo or home theater applications. The flagship line from BG is comprised of the 520i Tower, 420i Tower, 220i Center Channel and 210i Active Subwoofer, all offered in black anodized towers and black textured enclosures.

Models 520i, 420i and 220i feature our famous planar ribbon tweeters, along with high performance cone woofers, that deliver the amazing clarity, imaging and musicality that BG has become known for.

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Read and Follow Instructions – Please read this entire manual ***before*** unpacking and setting up your Radia Freestanding loudspeakers. For maximum performance and years of trouble-free enjoyment, all operating and care instructions should be followed.

Retain – DO NOT discard any factory packing material. The packing and shipping materials may be required in the unlikely event your loudspeakers need to be moved or shipped to our service center at BG.

Cleaning – Use a wax-free cleaning substance only (i.e. Pledge™) with a soft, dry polishing cloth, not a paper-based chamois. DO NOT apply any cleaning solutions to the grill cloth.

Liquid – DO NOT place BG loudspeakers near an open source of liquid that may spill on the loudspeaker surfaces.

Heat – DO NOT place BG loudspeakers near a direct heat source.

Tipping – BG loudspeakers should be placed on a smooth flat surface utilizing the enclosed spiked feet in order to ensure that the loudspeaker(s) do not tip over. A loudspeaker tipping over can pose a hazard for small children and pets.

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Unpacking Your BG Loudspeakers

1. Lay the shipping box down on the floor, ensuring that you have adequate space to lay the loudspeaker down after removing it from the shipping box. **Note**: If your floor is not carpeted, lay a blanket or other suitable soft fabric on the floor to prevent damage to your loudspeakers.

2. Rotate the box so that the white product label affixed at the factory is on top and facing up.

3. Pull the top flaps of the shipping box up, taking care not to cut yourself on the staples used to close the box. Open the other cardboard flaps to expose the loudspeaker still cradled in it's protective foam and inside a protective plastic bag. Remove the foam pieces over the top of the speaker. DO NOT open box ends.

4. Remove the loudspeaker by lifting it straight up and out of the box. Due to their weight, we recommend that two people work together to remove Models 520i and 420i.

Assembly Instructions: Special assembly instructions can be found in the last section of this manual.

Proper Hookup: Red terminal post to positive (+) amplifier post
Black terminal post to negative (-) amplifier post
Most BG loudspeakers can be bi-wired or bi-amped by simply removing the gold plated jumper to allow separate wires to be run to the low and high pass section of your system.

Break-In Times: Typically a BG loudspeaker requires not less than 48 hours of operation at moderate sound level before reaching its optimum sound quality. This improvement may be rather subtle but noticeable for a trained listener.
Note: Do not play your loudspeakers excessively loud to try to accelerate this process!

Amplifier: BG loudspeakers are extremely accurate and deliver a high degree of detail and resolution. Therefore a good 100-150 watt per channel amplifier or receiver will deliver adequate power for typical system and room size. Your authorized BG dealer can recommend an amplifier best suited to your needs.

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Setting Up Your BG Loudspeakers for Optimum Sound

Home Theater and Stereo Applications

Refer to the diagram on page 7 that depicts a recommended layout for Radia loudspeakers. This diagram is an overhead view of a typical listening room with the video screen located at the top of the diagram (the front of the room). Keep in mind the room is a part of the sound reproduction system and has a significant effect on the sound you experience, especially at lower frequencies (see subwoofer setup on page 9).

Locating a loudspeaker close to the wall increases bass output. It may also increase the boominess of the bass and can artificially alter the loudspeaker's tonal balance. We recommend that you spend some time adjusting the position of the loudspeakers, moving them in and out gradually, to get the sound you prefer. You may toe the loudspeakers in or out (rotate them around their vertical axis towards or away from your listening position) to improve high frequency balance (as indicated by the dashed lines on the diagram). In general, best results are obtained when the front left and right loudspeakers have their axis intersecting slightly behind the position of the listener.

The relative location of your listening position to the loudspeakers is important as well. If possible, do not select a listening position less than three feet (one meter) from the rear wall of the room. As with adjusting the placement of your loudspeakers, you can also adjust your listening position to get the most desirable bass reproduction and high frequency resolution.

The Radia 520i and 420i loudspeakers are dipole devices, which simply means that sound comes out of the rear of the loudspeaker as well as the front. For optimum performance they should not be installed inside a cabinet or alcove.

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Setting Up Your BG Loudspeakers for Optimum Sound

Home Theater Applications

If you plan to use your BG loudspeakers for home theater or multi-channel audio, here are some additional recommendations.

1. The center channel loudspeaker should be positioned on top of your television or a shelf directly above or below it. **NOTE:** The Radia 220i center channel loudspeaker is magnetically shielded.

2. If you are using a projector, you will need a suitable stand to position the center channel loudspeaker on the floor in front of the screen or a bracket above or below the screen. Aim the loudspeaker so it is pointed at your listening position. The center channel loudspeaker should be as close as possible to the screen so the voice soundtrack appears to come from the video image.

The optimum position for all five loudspeakers requires the same distance from the listening position (i.e. distance A, B and D are equal), see diagram on opposite page. If it is not possible to get the distances equal, you can use the delay and level adjustment functions available in most home theater processors to compensate for the differences in distances.

The diagram shows the optimum placement for the rear loudspeakers. The subwoofer should be placed beside or behind either the left or right front loudspeaker. For multiple subwoofers see your authorized BG dealer for advanced setup procedures.

This manual addresses 5.1 surround sound systems. Where 7.1 or higher systems are being utilized see your authorized BG dealer for advanced setup procedures.

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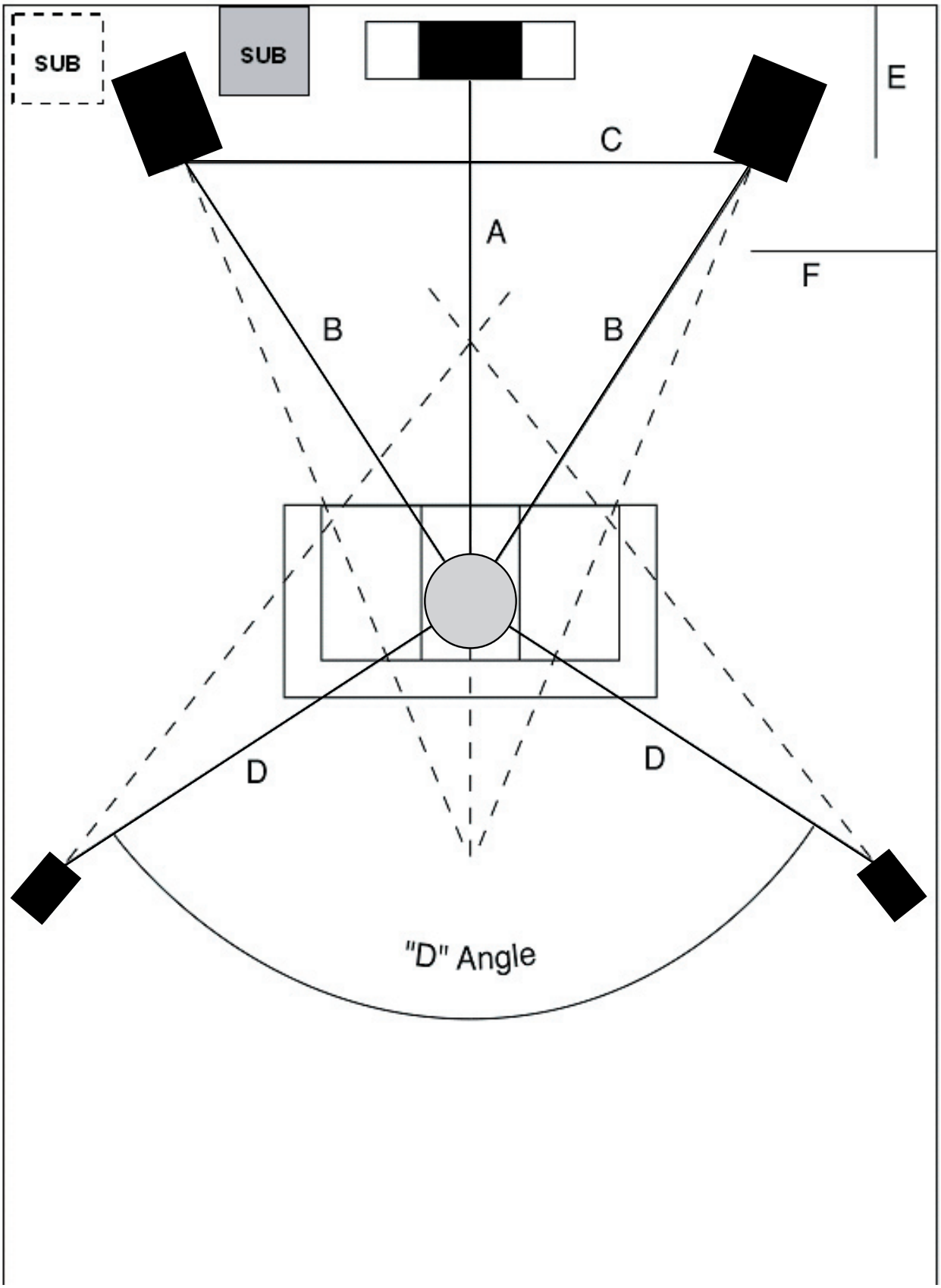
Optimum Setup



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Optimum Setup

While rooms vary in size and acoustics, almost any room can be set up to produce excellent sound with BG loudspeakers. Using a tape measure, you can easily setup your system properly. The distances you will need to measure are as follows:

Dimension	Description	Minimum	Optimum	Comments
A	Distance to screen/center channel	7 feet / 2.25 meters	8-12 feet in a typical room - depends on viewing distance and room size	Recommend setting the same as B but as close to the screen as desired
B	Distance to main loudspeakers	7 feet / 2.25 meters	8-12 feet in a typical room. Up to 60% of room width in large rooms	A careful gradual adjustment is recommended
C	Distance between main loudspeakers	7 feet / 2.25 meters	Same as B	
D	Distance to surround loudspeakers			Recommend setting the same as B
“D” Angle	Angle subtended by surround loudspeakers relative to listening position center	90°	120°	Do not place surround loudspeakers to the sides of the listening area
E	Distance between main loudspeakers and front wall	1 foot / 0.3 meters	Should be incrementally adjusted based on degree of “toe-in”	Should be slightly greater than dimension F
F	Distance between main loudspeakers and side walls	10” / 0.25 meters	20% of room width in large rooms	
Room Width	Width of listening room	10 feet / 3 meters		

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Setting Up Your BG Radia 210i for Optimum Sound

The Radia 210i Active Subwoofer by BG Corp is the perfect complement for our flagship Radia loudspeakers and can be used in all stereo, high performance home theater or multi channel audio applications. It's compact design with powerful performance is the ideal partner to our planar ribbon loudspeakers. Or feel free to use our 210i subwoofer with any high quality loudspeaker system.

Featuring a Reactive Canceling Design™, the 210i employs long excursion Kevlar™ woofers that are mechanically coupled via a rigid cylindrical housing. The twin woofers are mounted with their cones facing in opposite directions and electrically connected in phase. Recalling Newton's Law, where for every action there is an oppostite and equal reaction, the movement generated by the woofer cones causes the reactive forces of each woofer to effectively cancel one another. This helps eliminate vibration that could otherwise be transmitted to the enclosure for cleaner, more detailed bass.

The 210i consists of two 10" long excursion Kevlar™ cones, a 500 watt BASH™ power amplifier and a detachable power cord. Features include current sensing on/off power control, phase switch, by-pass switch, line-level input, variable crossover variable volume control- all to deliver lifelike home theater sound and trouble-free setup.

Processor Setting - We recommend using the small loudspeaker mode on your processor to protect your loudspeaker's low frequency drivers from extremely low bass signals. This will also allow you to achieve more dynamic range with cleaner sound at higher volumes.

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Subwoofer Setup

Subwoofer Placement, Connection and Adjustment:

Placement:

The 210i subwoofer should be placed beside or behind either the left or right front speaker (see diagram). When using more than one subwoofer consult with your authorized BG dealer for advanced setup procedures.

Connections:

1. **L&R line-level input jacks.** These inputs are designed for low-level RCA component connections and interconnects derived directly from your receiver or processor. If your receiver or processor only has one subwoofer output plug it into the Right or Left low-level input.

2. **Detachable power cord.** This subwoofer is supplied with a detachable power cord for ease of installation and transportation.

Adjustments:

1. **On/Off power switch.** Once the 210i subwoofer is positioned in the room and the proper cables are installed the on/off switch should be engaged in the on position for initial power up. The red LED turning on indicates the unit is powered on.

2. **Auto/On switch.** With this switch in the Auto position, the amplifier is in stand-by mode, turning on automatically when the signal arrives from the receiver and turning off after 10 minutes when the signal is no longer present. In the ON position, the amplifier is always on regardless of the presence of the signal from the receiver. For normal use, we recommend the Auto position.

3. **Phase switch.** This switch is specifically designed to eliminate phase discrepancies between the 210i subwoofer and the primary LCR loudspeaker's phase. The phase relationship depends on the relative distance between the subwoofer and the loudspeakers. If the subwoofer is located within 5 feet (11.5m) from either loudspeaker we recommend putting the phase switch at 0 degrees. If your subwoofer is located further than that, experiment with both switch positions and select the one where the bass sounds the fullest.

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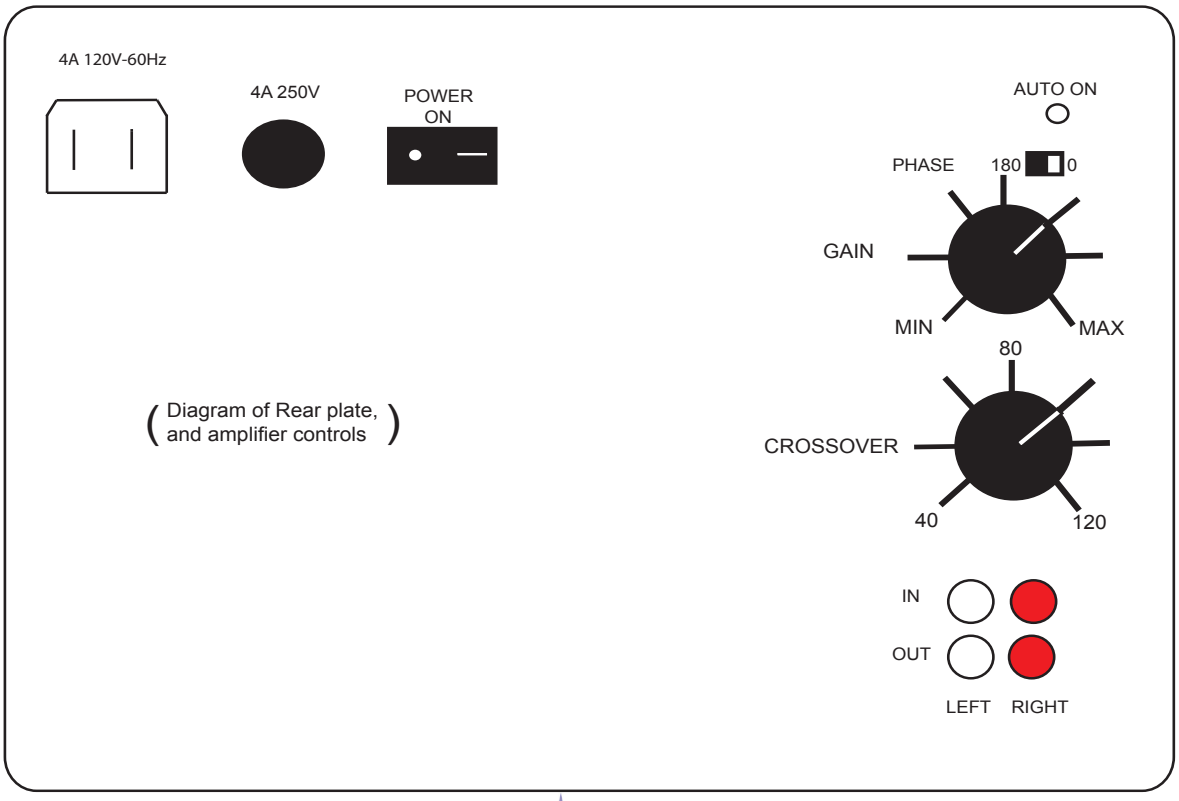
Subwoofer Placement, Connection and Adjustment:

Adjustments (cont.):

4. **Enabled/Crossover Disabled switch.** This switch allows enabling or disabling the subwoofer's internal crossover. If you use the LFE output in your receiver/processor we recommend turning the subwoofer crossover control knob to 120Hz or disabling it all together. If an external crossover is used the subwoofer crossover may be disabled.

5. **Crossover.** This control knob allows adjustment of the cut-off frequency of the internal subwoofer low pass crossover (filter) within 40Hz-120Hz. We recommend a setting of 80Hz, which would match the standard cut-off frequency of the receiver/processor for small loudspeakers. This is also recommended if using your loudspeakers in Stereo mode since this would provide optimal integration of the loudspeakers and the subwoofer.

6. **Gain Control.** This control allows the user to set the loudness level of the subwoofer relative to the loudspeakers. This will be determined by your room, source material and personal preference.



(Diagram of Rear plate, and amplifier controls)

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Special Assembly Instructions

Unpacking Radia 520i / 420i

1. Lay the shipping box down on the floor, ensuring that you have adequate space to lay the loudspeaker down after removing it from the shipping box. **Note**: if your floor is not carpeted, lay a blanket or other suitable soft fabric on the floor to prevent damage to your loudspeakers.

2. Rotate the box so that the white product label affixed at the factory is on top and facing up.

3. Pull the top flaps of the shipping box up, taking care not to cut yourself on the staples used to close the box. Open the other cardboard flaps to expose the loudspeaker still cradled in it's protective foam and inside a protective plastic bag. Remove the foam pieces over the top of the loudspeaker. DO NOT open box ends.

4. Remove the loudspeaker by lifting it straight up and out of the box. Due to their weight, we recommend that two people work together to remove Models 520i and 420i.

Assembly Instructions for 520i / 420i Loudspeaker

1. Prepare the following tools: a Phillips screwdriver and an Allen (hex) wrench (located in the packing box).

2. Carefully remove the loudspeaker from the packing box as above. Place it on a stable surface with a soft cushioning cover (use chairs, a small table covered with foam or a sofa at least one foot above the floor). Remove plastic protective film from the glossy part of the base. With the front of the grill facing up or to the side (Fig. 1) make sure the loudspeaker is in a stable position. To facilitate the assembly procedure, position the loudspeaker so the high gloss base is free or has its own support.

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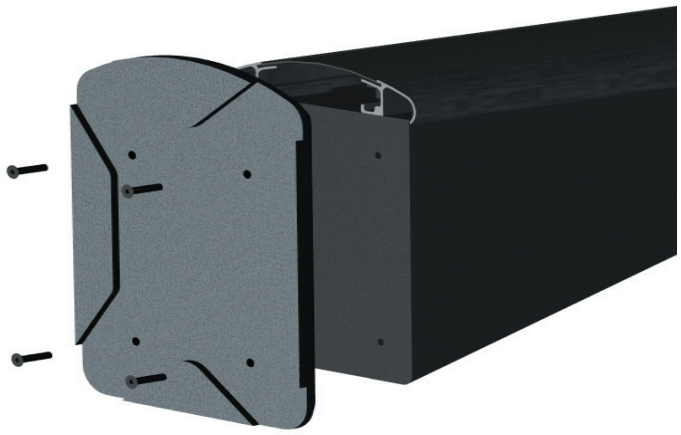
Assembly Instructions for 520i / 420i Loudspeaker

3. Holding the base and using the Allen (hex) wrench remove 1/4” machine screws from the wooden base (Fig. 1). DO NOT allow the base to rotate as the upper surface of the base has a glossy finish that can be scratched by the edge of aluminum extrusion. Depending on how you positioned the loudspeaker, the base may either drop or the loudspeaker will shift when the last screw is detached if the loudspeaker does not have support.

4. Remove the metal stand and spiked feet from the packing box.

Caution! Use care when handling the stand. The spiked feet are very sharp and can cause injury.

Fig. 1 Removing the base.



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Base Assembly Instructions for 520i / 420i Loudspeaker

5. Attach the metal stand as shown in the picture by holding the wooden base and the metal stand together (Fig.2). Tighten the screws at the bottom and place the loudspeaker vertically.

   NOTE: If you have a hard surfaced floor, the sharp pointed spikes may scratch the surface when the loudspeaker is set vertically on its feet. Four protective metal disks are included with your loudspeaker for placement under the spikes. The disks are small therefore it is recommended you use a larger protective device, such as stiff plastic or cardboard, that cannot be pierced while positioning your loudspeakers. Replace the protective device with the metal discs after you have finalized placement of the loudspeakers. Make sure the center of the spike fits directly into the central stabilizing dent located in the center of the metal disc.

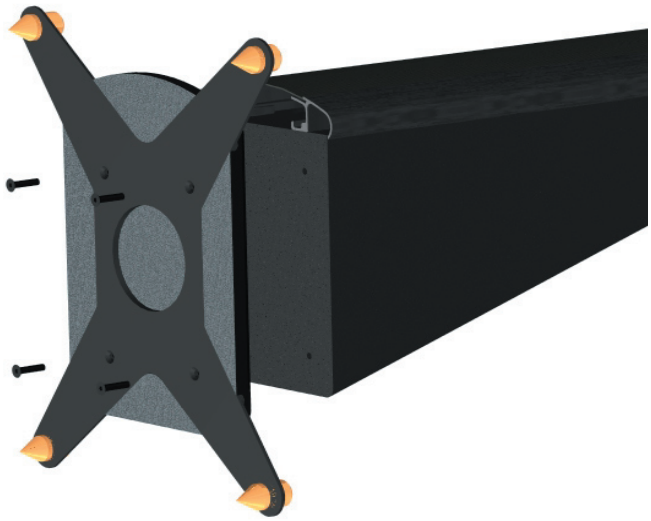

Fig. 2 Attaching the base and the metal stand.

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Base Assembly Instructions for 520i / 420i Loudspeaker

6. Pull away only 3-4” of the top portion of the two rubber inserts located on the top rear of the loudspeaker (Fig. 3).

7. Locate the high gloss top cap in the packaging. Remove the protective plastic film from the top cap. Place the top cap on the loudspeaker with the metal brackets sliding the slotted tabs under the screws. Align the cap and tighten the screws. Replace the rubber inserts.

8. Assemble the second loudspeaker in the same way. Use the threaded spiked feet and top caps to level the loudspeakers on the floor for maximum stability.

Fig. 3 Mounting the top cap.

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Warranty Information

WARRANTY: All BG loudspeaker systems are warranted to the original purchaser for five years against defects in materials and manufacture when used in properly designed systems (two years for the Z-Sub and Radia 210i subwoofers).

Please record your speaker's information below for future reference.

MODEL: _____
SERIAL NUMBER: _____
PURCHASE DATE: _____
AUTHORIZED DEALER: _____

As part of our policy of continual product improvement, BG reserves the right to change or discontinue any specifications or parts associated with any of its products without advanced notice. Thank you again for choosing BG loudspeakers.

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